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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/540,552 | 08/02/2005 | Yasuo Mizota | Q88723 | 5361 |

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| EXAMINER | |
| KNABLE, GEOFFREY L | |

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| ART UNIT | PAPER NUMBER |
| 1791 | |

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| MAIL DATE | DELIVERY MODE |
| 10/17/2007 | PAPER |

23373 7590 10/17/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/540,552 | Applicant(s) MIZOTA, YASUO | |
| | Examiner Geoffrey L. Knable | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>6/24/05, 10/31/06</u> . | 6) <input type="checkbox"/> Other: ____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 6,461,459) taken in view of Marchini et al. (US 6,702,913) and Hitotsuyanagi et al. (US 2002/0046796).

Ogawa et al. discloses a method (and corresponding apparatus) of making a tire structural member (belt or carcass) by successively and contiguously attaching strips to a convex outer surface cross section of a forming drum (note col. 5, lines 25-29 indicating that the core/drum can have a crowned outer surface) by a strip feed device such that the strips extend obliquely to a center axis of the forming drum (e.g. fig. 7), the method including continuously attaching the strips to the convex outer surface of the forming drum by successively feeding strips onto the convex outer surface by the strip feed device, while the strip feed device is being moved parallel to the center axis of the forming drum relative to the forming drum and while the forming drum is being rotated about the center axis thereof (e.g. col. 9, lines 1-9). Further, Ogawa et al. suggests achieving the desired inclination angle of the strips by controlling the rotation of the forming drum/core and the lateral displacement speed relative to each other (col. 9, lines 10-14). Ogawa et al. thus teaches a method/apparatus as claimed except specific control of the rotation of the drum from minimum to maximum to minimum velocities relative to a fixed lateral movement speed as claimed is not suggested.

Marchini et al. is also directed to forming a tire reinforcement structure such as a belt by applying successive strips on a crowned drum and in particular teaches that unless appropriate steps are taken, the curvature of the drum makes it impossible to optimally apply the strips, this reference teaching instead to progressively apply the strips in a manner that the angle relative to the midplane gradually increases towards the axial extremities of the strips (esp. fig. 5 and col. 8, line 28-col. 11, line 35). In view of this teaching and the fact that Ogawa et al., as noted above, suggests achieving the desired inclination angle of the strips by controlling the rotation of the forming drum/core and the lateral displacement speed relative to each other (col. 9, lines 10-14), it would have been obvious to control these speeds relative to one another to yield the desired angle variation taught to be advantageous by Marchini et al., especially when applying to crowned drums.

As to leaving the axial speed fixed and only adjusting the drum angular velocity, Hitotsuyanagi et al. (like Ogawa et al.) is also directed to successively applying rubberized cord material to a drum using an axially traversing feeder and rotatable drum so as to have a non-linear path and in particular evidences an understanding that a suitable and effective manner to achieve the varying angles (and especially a larger angle at the edges relative to the center) is to control only the speed of the drum during the traverse of the feed device with the maximum speed being at the center and reduced speeds at the edges - note esp. paragraphs [0125]-[0131] and fig. 11. To control the drum rotation during the traverse of the feed device in Ogawa et al. so as to be at a maximum at the center and smaller towards the edges to achieve the desirable

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cord path suggested by Marchini et al. would therefore have been obvious and predictably be expected to achieve the desirable angular path. A method and corresponding apparatus (including the controller controlling the speeds in this manner) as required by claims 1 and 4 would therefore have been obvious.

As to claims 2 and 5, Marchini et al. is considered to be teaching achieving the same final resultant cord path as applicant (i.e. both desire that the strips adjoin along their entire length) and further specifically teaches that the actual path selected is computed based upon "the geometric and dimensional characteristics of the toroidal support 3 and of the strip-like segments 5 laid thereon" (col. 10, lines 45-50), specific mention being made of the axial dimension of the belt, the curvature and radius of the core and the number of strips to be applied (col. 10, line 55 - col. 11, line 18). Taking this teaching coupled with the processing of Ogawa et al./ Hitotsuyanagi et al. which suggests achieving the desired inclination angle of the strips by controlling the rotation of the forming drum/core (col. 9, lines 10-14), controlling rotation of the drum following the claimed formula is the obvious and necessary geometric relationship that would have to be followed by the artisan to achieve the adjoining strip edges along their entire length.

As to claims 3 and 6, Marchini et al. also suggests effecting the cutting so that the oblique ends end up circumferentially oriented (esp. col. 11, lines 19-30), the claimed angle being the necessary and obvious geometric manifestation of this teaching.

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3. Claims 1-6 are rejected under 35 U.S.C. 102(a) and/or (e) (for US patent publication) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohkubo (US 2003/0024627) or equivalent EP 1279485 to Ohkubo.

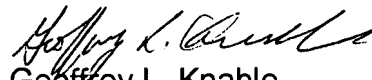
Ohkubo discloses successively applying strips to a crowned drum (fig. 5) using a traversing feed device and rotating drum to control the angle. Although the crowned drum in the detailed description only mentions driving the support at a constant speed and varying the feed device traverse (paragraph [0039]), it does seem to indicate that either the drum speed or the traversing speed may be controlled (e.g. paragraphs [0016]-[0021]), it being therefore implicit or obvious to fix the speed of either the drum or the feed traverse. A process and apparatus as claimed is therefore anticipated or obvious from this disclosure.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Geoffrey L. Knable
Primary Examiner
Art Unit 1791

G. Knable
October 12, 2007